

The present invention provides an apparatus comprising a wavelength variable light source for shifting a wavelength of light stepwise within a predetermined range and applying the light with the shifted wavelength onto a light transmissible object that is to be measured and is provided with a gap; a camera for taking an image of an interference fringe formed by the light transmitted by said object, correspondingly to each step of the shifted wavelength; an image memory for storing images taken by said camera; and means for obtaining a change in the intensity of the images taken by said camera, at each of predetermined positions of each image over said predetermined wavelength range; and means for determining gap values of a plurality of points of the gap based on the obtained changes in the intensity.